

SPP-AECI Joint Projects

Missouri Public Service Commission

August 30th

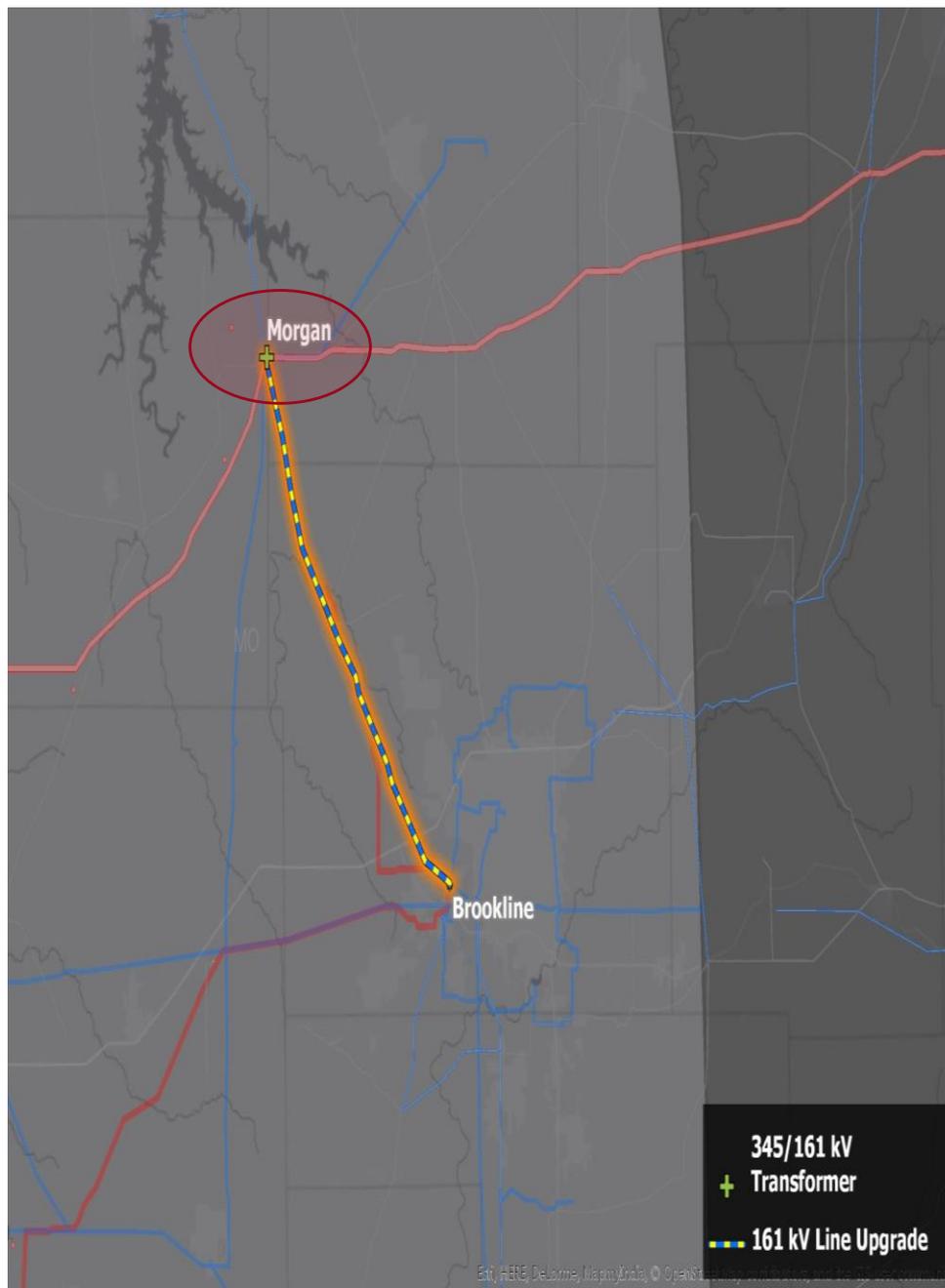
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SPP-AECI Joint and Coordinated System Plan

- Joint study between SPP and AECI is a requirement of the Joint Operating Agreement
 - Performed every other year (even years)
 - Evaluate the combined SPP-AECI System and identify if mutually beneficial projects exist
- 2016 version of the study concluded in January of 2017
 - [Link to 2016 SPP-AECI JCSP Final Report](#)
- Study evaluated five different target areas resulting in two projects being recommended by SPP and AECI
 - Brookline Reactor Project
 - Morgan Transformer Project

Morgan Transformer Project

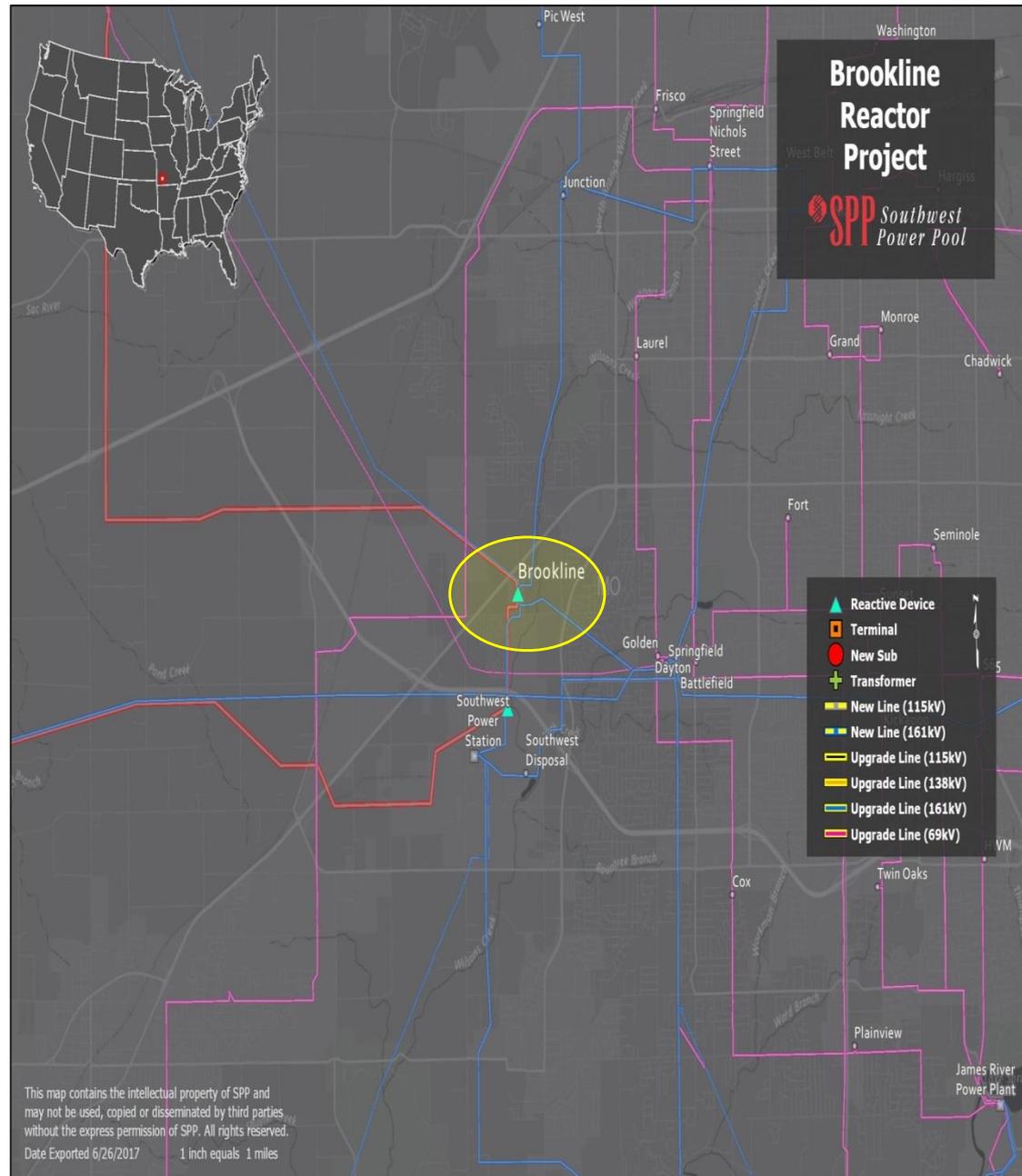
- Addition of a new 400 MVA 345/161 kV Transformer at AECI's Morgan substation and an upgrade of the 161 kV line between Morgan and Brookline
 - Located in southwest Missouri
 - Wholly on AECI's transmission system
 - Addresses Economic Congestion and Thermal Overloading in the area
 - Approved out of 2017 SPP ITP10



Brookline Reactor Project

- Addition of a 50 MVAR Reactor at City Utilities Brookline 345 kV substation

- Located in southwest Missouri
- Wholly on SPP's transmission system
- Addresses real-time high voltage issues in the area
- Approved out of SPP Regional Review Process



Cost Sharing between SPP and AECI

- **Morgan Transformer Project**
 - \$13.75 Million Cost Estimate
 - SPP Cost Responsibility - \$12.25 Million (89.1%)
 - AECI Cost Responsibility - \$1.5 Million (10.9%)
 - SPP B/C Ratio of 2.88 over 40 years (2017 ITP10 F3)
- **Brookline Reactor Project**
 - \$5.0 Million Cost Estimate
 - SPP Cost Responsibility - \$4.85 Million (97%)
 - AECI Cost Responsibility - \$150 Thousand(3%)
 - B/C not calculated for reliability driven projects

FERC Filings

- SPP made filings at FERC for the two projects on August 7, 2017
 - Approval of SPP-AECI Joint Projects
 - Cost Sharing between SPP and AECI
 - SPP Regional Cost Allocation
 - Other Issues Related to the Treatment of the Projects
- Docket Numbers
 - [Filing in ER17-2256](#)
 - [Filing in ER17-2257](#)
 - [Motion to Consolidate](#)

SPP-MISO Coordinated System Plan (CSP)

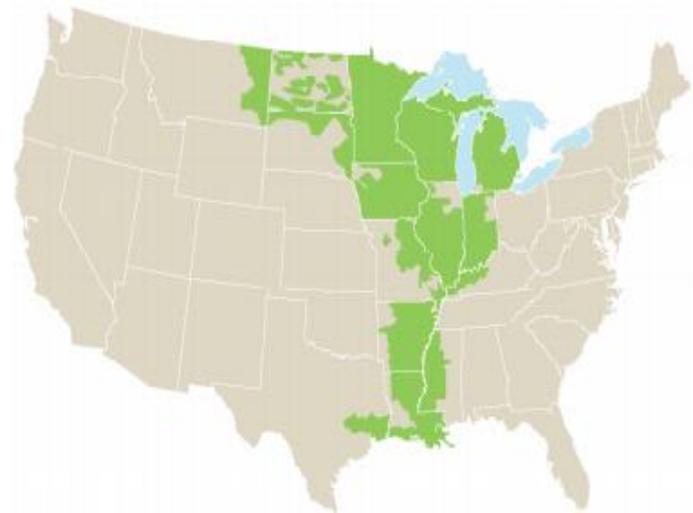
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SPP-MISO Coordinated System Plan (CSP)

- Joint study performed between SPP and MISO
- Process outlined in Article 9 of the SPP-MISO JOA
- Defined FERC Order 1000 Process
- Annual process to determine if a study is needed
- Two portion study
 - Interregional Coordinated System Plan
 - Regional Review



MISO Market Area

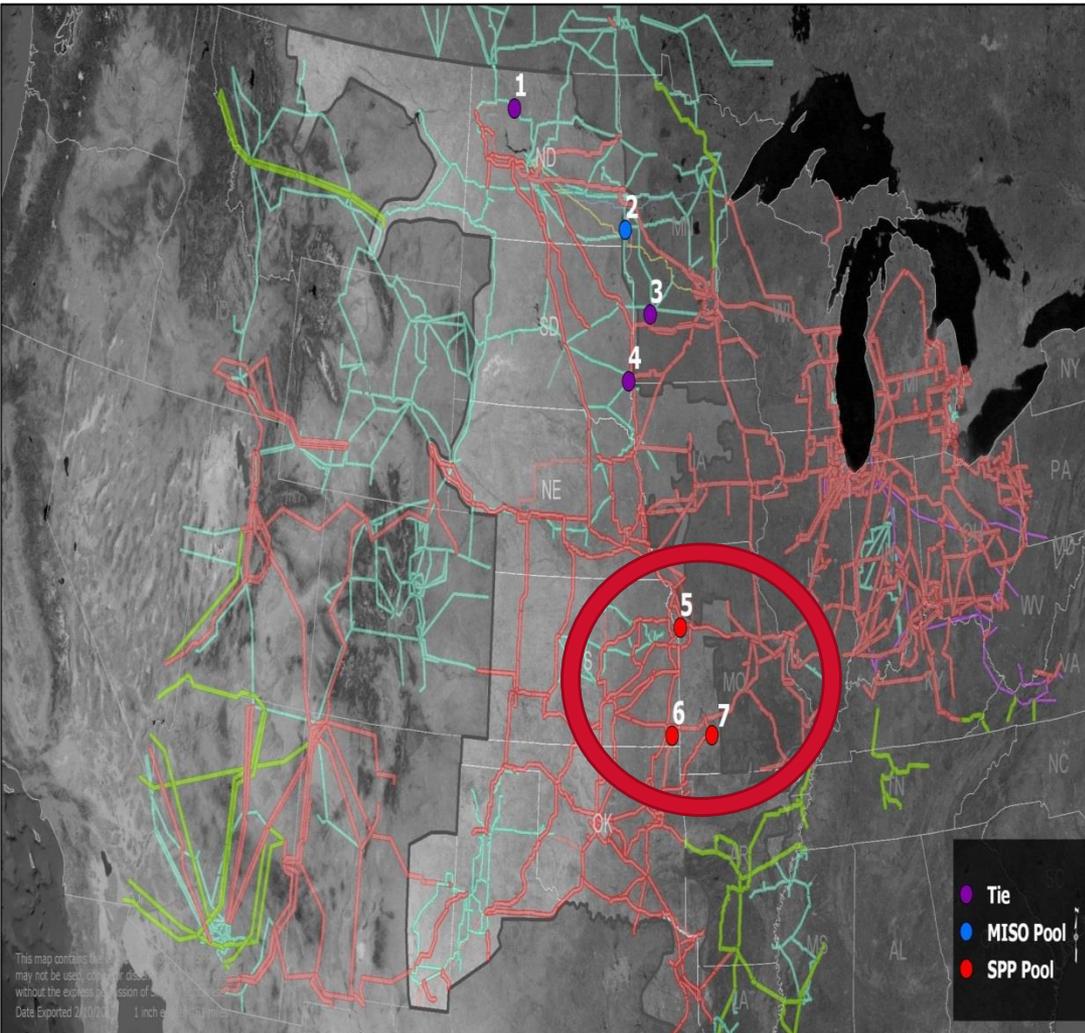
2016 SPP-MISO CSP (Targeted Study)

- Built joint models that reflect a regional approach to carbon-constrained future
 - Merged SPP and MISO regional models
- Developed needs list by leveraging needs identified in SPP and MISO regional processes across the entire SPP-MISO seam
- Study resulted in one interregional project being recommended to continue to the regional review process
 - Loop One Split Rock to Lawrence 115 kV Circuit into Sioux Falls located in South Dakota

CSP Project Regional Review

- MISO is not recommending the I-18 interregional project for further consideration
 - Two alternative projects provide MISO more or equal benefits at a much lower cost
 - Op-guide currently in place that operates the congested line in the open state
 - Potential for additional unreserved use charges by SPP
- SPP Staff has recommended the approval of the interregional project
 - SPP stakeholders are still in the progress of making recommendations
 - SPP MOPC and Board of Directors in October 2017
 - Robust solution benefits SPP region across all sensitivities
 - Other alternatives considered potentially create additional congestion

2016 CSP Needs



NEED ID	CONSTRAINT
1	Rugby WAUE-Rugby OTP Tie
2	Hankinson - Wahpeton 230kV FLO Jamestown - Buffalo 345kV
3	Sub3 - Granite Falls 115kV Ckt1 FLO Lyon Co. 345kV Ckt1
4	Sioux Falls - Lawrence 115kV FLO Sioux Falls - Split Rock 230kV
5	Northeast - Charlotte 161kV FLO Northeast - Grand Ave West 161kV
6	Neosho - Riverton 161kV FLO Neosho - Blackberry 345kV
7	Brookline 345/161kV Ckt 1 Transformer FLO Brookline 345/161kV Ckt 2 Transformer

Needs along SPP-MISO Seam in Missouri

2016 CSP Results

Need Addressed	Project Description
2	Rebuild Hankinson - Wahpeton 230kV line
3	2nd Lyon County Transformer
4	Loop One Split Rock - Lawrence 115kV Ckt into Sioux Falls
5	Northeast - Charlotte 2 ohm series reactor
5	Crosstown - Blue Valley 161 kV line
6	Lacygne - Blackberry 345 kV line plus 345/161 kV transformer and Blackberry - Asbury 161 kV line
7	James River - Brookline 345 kV line plus 345/161 kV transformer
7	Morgan 345/161 kV Transformer plus Morgan - Brookline 161 kV uprate

- SPP and MISO determined the best project for all the study needs
- For needs 5, 6, and 7 SPP staff preferred regional solutions identified in SPP's regional planning processes over the potential interregional solutions

Future SPP-MISO Joint Planning

- SPP and MISO will continue to work on improving the Coordinate System Plan process
- Next SPP-MISO Interregional Planning Stakeholder Advisory Committee (IPSAC) Meeting will be held in Late 2017 or Early 2018
 - Annual Issues Review
 - Discuss Future SPP-MISO Joint Planning
 - Potential 2017-2019 SPP-MISO CSP